DOCUMENT RESUME

ED 121 759 SP 010 023

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TITLE Simulation and Leadership Training.
PUB DATE 76
NOTE 13p.; Paper presented at the Annual Convention of the American Educational Research Association (San Francisco, California, April 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Group Dynamics; *Group Instruction; Group Relations; Instructional Programs; Interaction Process Analysis; *Leadership Training; Management Games; *Simulation; Teaching Methods; *Teaching Models; Vocational Education
IDENTIFIERS *Three Stage Model of Instruction

ABSTRACT

Ways in which group simulations were incorporated into a Three-Stage Model of Instruction, used to develop 13 units of leadership instruction, are described in this report. The units of instruction were designed for use by high school youth participating in vocational organizations. Using simulation to train leaders has several advantages: (1) it provides a realistic learning environment; (2) it generates a high degree of participant involvement; (3) it encourages the application of leadership knowledge; and (4) it can be used with large or small groups. The results of a field test of the 13 units of leadership instruction are also presented, focusing on the effectiveness of the group simulations. Methods to evaluate the effectiveness of group simulations are then discussed, along with consideration of the importance of simulation as an instructional technique. (Author/LBH)

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ED121759

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Simulation and Leadership Training[1]

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The purpose of this paper is threefold. First, the paper describes how group simulations were incorporated into a Three-Stage Model of Instruction (Feldhusen, Ames, & Linden, 1974) that was used to develop thirteen units of leadership instruction. The units of instruction were designed for use by high school youth participating in vocational organizations. Second, the paper presents the results of a field test of the units of leadership instruction, focusing on the effectiveness of the group simulations. Third, the paper discusses ways to evaluate the effectiveness of group simulations and considers the importance of simulation as an instructional technique.

Simulation and Leadership Training

Using simulation to train leaders has several advantages: first, it provides a realistic learning environment; second, it generates a high degree of participant involvement; third, it encourages the application of leadership knowledge; fourth, it can be used with large or

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[1]A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April, 1976. The research reported in this paper was supported by a grant from the Indiana State Board of Vocational & Technical Education (William B. Richardson, Principal Investigator).

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small groups. McCluskey (1973) noted that "simulation and miniaturization have been used frequently in the area of training where the objective of the simulation is to create conditions that will provide transfer of training to the real-world system" (pp. 19-20). This is precisely the objective of using simulation to train leaders.

The use of simulation as a technique for leadership training has been advocated by several researchers (Brandon, 1970; Koeniger & Ward, 1972; Meckley, 1970; Rowe, 1973). Meckley (1970), for example, described simulation-training materials designed by the Center for Vocational and Technical Education at the Ohio State University in order to develop leadership among vocational educators. He reported that two simulation packages were field tested and received an enthusiastic response from the participants. Since most of the existing leadership-training materials are designed for adults, researchers attempting to develop youth leadership must either adapt existing simulation materials or create new leadership simulation materials designed for adolescents.

Although simulation has many advantages as an instructional technique, it also has disadvantages. One disadvantage is that simulation is not an efficient mode of transmitting large amounts of basic information. Reading is much faster. With this limitation in mind, the authors decided to incorporate simulation into the Three-Stage Model of Instruction (Feldhusen et al., 1974), rather than rely upon simulation as the sole instructional technique used to train leaders.

Three-Stage Model of Instruction

The Three-Stage Model of Instruction (Feldhusen et al., 1974) is designed to make learning more meaningful for students. The model accomplishes this by organizing instruction so that students progress

from low level types of learning, such as knowledge and comprehension, to higher types of learning, such as application, analysis, synthesis, and evaluation. In Stage One of each unit, students achieve a basic understanding of a topic by means of self-paced mastery learning supplemented by occasional factual presentations by the teacher. In Stage Two of each unit, students are involved in small group simulations designed to structure the application, analysis, synthesis, and evaluation of the basic knowledge gained from Stage One of the unit. Simulations were incorporated into Stage Two because this stage emphasizes the application of knowledge. In Stage Three of each unit, students complete individual projects designed to encourage a personal involvement and internalization concerning what they have learned from Stages One and Two of the unit. Thus within each unit, instruction is organized hierarchically and progresses from low level mastery learning to higher level types of learning. Across several units, the three-stage learning hierarchy is repeated for each unit.

For this project, the Three-Stage Model was applied to the content area of leadership. In order to identify the important skills and functions of group leaders and members, the leadership literature was reviewed. The leadership skills and functions that were identified were then categorized into broad topical areas by the project staff and an advisory committee of ten vocational teachers and youth group members. Work by Stogdill (1974) was also helpful in determining these areas. The following 13 broad topical areas resulted:

1. Introduction to leadership
2. Planning and initiating
3. Parliamentary procedure
4. Developing group goals
5. Levels of leadership in a group

6. Skills of a group leader
7. Personal characteristics of a group leader
8. Skills of a group member
9. Developing group cohesiveness
10. Effective committees
11. Communication skills
12. Internal operations of a group
13. Outcomes of leadership.

For each of these thirteen areas of leader and group member skills, a separate "three-stage leadership unit" was developed. Stage Two of each unit involved a simulation activity designed to involve the application of knowledge learned in Stage One. Supplementary simulation activities were included for most of the units. In order to better demonstrate the use of simulation in this project, Stage Two of Unit 1 will be described in detail, and then the simulations used at Stage Two of the other units will be described.

Leadership Simulations

Stage Two involves group work and is designed to foster the application of the knowledge acquired in Stage One. Groups are directed by a Group Instructional Guide (GIG). The GIG provides an introduction, states the objectives, and specifies the learning activities. A Basic Information Summary (BIS) is then given to the students. The BIS includes specific directions on how to perform the group simulation. The BIS for Stage Two of Unit One provides directions for a simulation called Mock Class Election. The simulation is designed to involve the application of definitions of leadership learned in Stage One of Unit One.

In the simulation for Stage Two of Unit Two, students gain skill in planning and initiating by developing an agenda for a meeting designed to overcome the lack of communication between students and

teachers. Additional meeting skills are learned in Stage Two of Unit Three, where the group simulation fosters the correct use of the rules of parliamentary procedure. The group simulation for Unit Four is a consensus exercise.

The simulation for Unit Five structures the development of a leadership chain that involves several levels of leadership. The problem-solving skills of a group leader are taught in the simulation for Unit Six, where groups participate in brainstorming activities. The simulation for Unit Seven involves discussion of leadership case studies and is designed to emphasize the interplay between the personal characteristics of a group leader and the situation. The simulation for Unit Eight examines the roles of group members.

Units Nine through Twelve focus on the functioning of groups. In Stage Two of Unit Nine, group cohesiveness is developed by a simulation involving cooperation and inter-group competition. The skills involved in committee work are developed in Stage Two of Unit Ten where a simulation that involves both standing and special committees is used. Unit Eleven provides practice in communication skills by using a simulation that focuses on listening and giving directions. The internal operations of a group are practiced in the simulation for Unit Twelve where groups learn to deal with "hidden agendas" that can otherwise lead to internal strife.

Finally, the simulation for Unit Thirteen requires groups to synthesize what they have learned from previous units by planning a community project. The project must employ levels of leadership, committees, and the other leadership skills taught by the units of instruction. Besides serving to pull together the leadership skills taught in previous

units, Unit Thirteen stresses the civic responsibility of leaders and citizens.

It should be noted that several group simulations were included in the leadership units, with permission from J.W. Pfeiffer and J.E. Jones (Eds.), A Handbook of Structured Experiences for Human Relations Training. The other simulations were used with permission or developed by the authors.

Method

Sample

The field-test sample initially consisted of five classrooms representing each of six vocational youth group organizations for a total of 30 classrooms. However, data from only 24 classrooms are reported here. The reasons six teachers did not complete the field test were as follows: two teachers changed jobs during the field test; three teachers had not yet returned posttests; one teacher did not complete the field test because his students encountered vocabulary problems; and two teachers did not finish teaching the units in the allotted time. Most of the field-test teachers taught junior and senior high school students who did not experience any serious vocabulary problems. The 24 classrooms that completed the field test enrolled a total of 550 students.

Design

The field test consisted of a pretest-posttest, control-group design. The 30 teachers who participated in the field test had been recommended by the State Department of Public Instruction. After insuring the cooperation of these teachers, they were randomly assigned to the experimental and control groups. Each experimental teacher was randomly assigned to teach a block of four units--either units 1, 2, 4, 5, or

units 6, 7, 8, 9, or units 10, 11, 12, 13. Unit 3, Parliamentary Procedure, was not field tested because some organizations do not study this topic. The field-test design and procedures were explained to the field-test teachers at a one-day workshop.

Instrumentation

Both formative and summative evaluation instruments were used in the field test. The formative evaluation instrument consisted of a teacher log in which they recorded how they used the units and what they felt were the strengths and weaknesses of the units. The summative evaluation instruments were designed and selected to assess components of each of the three stages of the units. Teacher ratings of leadership and student self-reported leadership were used to assess the amount of leadership skills developed during the simulations at Stage Two of the units. Since this paper emphasizes the use of simulation in the field test, the summative evaluation instruments used to assess the effectiveness of Stages One and Three will not be described.

Results

Formative Evaluation

The formative evaluation results consisted of the verbatim statements that the field-test teachers expressed in the logs that they kept while teaching each unit. The comments were quite favorable. Several teachers commented that the simulations were the most useful material in a unit of instruction.

Summative Evaluation

The overall instructional goal for Stage Two of each unit was to teach students to apply, analyze, and evaluate the leadership knowledge

they had learned in Stage One of each unit. Because students were involved in small group simulations at Stage Two, the appropriate test of the effectiveness of this type of learning was ratings of leadership performance. Leadership ratings were therefore obtained from the teachers and from the students themselves in the form of a self-report of leadership performance.

Table 1 shows that students in the experimental group received higher leadership ratings from teachers than students in the control group for items involving persuasiveness, initiating a group activity, and being a class leader. However, the control group received higher ratings than the experimental group for the item concerned with choosing team members. This item may have lacked some face validity since one teacher indicated that, "we haven't done that." There were no significant differences for the group spokesman rating. There were also no significant differences between the experimental and control groups concerning self-reported leadership performance. On the basis of the teacher ratings of student leadership performance, it was therefore concluded that the simulations used in Stage Two of each unit were moderately successful in teaching students to apply and integrate their leadership knowledge.

Evaluating Group Simulations

Thus far, this paper has described how group simulations were incorporated into a Three-Stage Model of Instruction (Feldhusen et al., 1974) and has reported the results of a field test of the three-stage leadership units. In this final section of the paper, the evaluation of simulations is considered.

Twelker (1972) described the issue of evaluating simulations as follows:

> Evaluation is looked upon with varying degrees of distrust by some in educational circles. They point to the inadequacies of some evaluation plans which lead to the gathering of information that is "high cost, low yield." Other critics see evaluation as money being poured down the drain, since the decision maker requesting the evaluation often completely disregards it in the decision-making process...It is crucial that potential consumers see the importance of evaluation and understand how to use the evaluative data (p. 150).

The authors agree that it is essential to evaluate the instructional effectiveness of simulations. In the present study, both formative and summative evaluation data were gathered. The formative evaluation data consisted of statements made by the field-test teachers concerning the use of the simulations. Other types of formative evaluation that can be used are: gathering comments from participants, using trained observers, and judging the quality of the group's work. Participants can also be asked to rate one another's performance.

The summative evaluation employed in this study involved a pretest-posttest, control-group design and ratings of leadership performance from teachers and students. Summative evaluation of a simulation does not require a control group. In some instances, it may simply consist of participant ratings of the effectiveness of the simulation. Regardless of what types of evaluation procedures are used, it is important that they be specifically designed to assess the particular simulation that was used.

Summary

Simulations were developed for thirteen units of leadership instruction designed for use by high school youth in vocational organ-

izations. The simulations were incorporated into Stage Two of a Three Stage Model of Instruction because this stage involves the application of knowledge. The model provides for knowledge-acquisition (Stage 1), knowledge-application (Stage 2), and knowledge interpretation and synthesis (Stage 3). The use of simulations in the project greatly enhanced the quality of the instructional materials. Formative and summative evaluation data documented the general effectiveness of the simulations. The importance of evaluating the instructional effectiveness of simulations was emphasized.

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Table 1

Summative Evaluation Results

Analysis	Significance
Stage Two	
Teacher Ratings	
Persuasiveness	$p < .10$
Initiating Group Activity	$p < .001$
Class Leader	$p < .10$
Choosing Team Members	$p < .05$
Spokesman for Group	NS
Student Self Report	NS

NS Not significant